



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.         | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------|
| 10/086,274  | 03/01/2002  | Leo Peter Wessels    | 9154-030US (US 45233<br>WO) | 2069             |
| 570   | 7590        | 03/02/2004           | EXAMINER                    |                  |
| AKIN GUMP STRAUSS HAUER & FELD L.L.P.<br>ONE COMMERCE SQUARE<br>2005 MARKET STREET, SUITE 2200<br>PHILADELPHIA, PA 19103-7013 |             |                      | FORTUNA, ANA M              |                  |
|   |             |                      | ART UNIT                    | PAPER NUMBER     |
|   |             |                      | 1723                        |                  |

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/086,274             | WESSELS ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Ana M Fortuna          | 1723                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4, 5-7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coillet (4,161,446) in view of Knamaru et al (3,933,646), and Slegers (4,980,066). Coillet ('446) discloses a process including removing salts from salt aqueous solution, e.g. regenerate from an ion exchange process of ground water treatment, by a desalination membrane, e.g. a reverse osmosis membrane (abstract, column 1, first paragraph, column 2, lines 49-68, and column 3, lines 1-9, and Figure 1, elements 13, 30, 31, 32, 33). Reference '446 discloses the membrane as any membrane known in the art and made of polyethylenamines reacted with polyfunctional agents (e.g. polyamide membrane) (column 3, lines 19), the membrane configuration or method of operation does not seem to be critical to the process. The use of the membrane in dead-end mode and cleaning of the membrane is not disclosed. Reference '646 teaches polyamide membranes having spiral wound configuration and its operation in dead-end mode, and its use for removing salt from salt containing solutions, e.g. sodium (abstract, Figures 1-3, column 2, lines 46-66, column 6, lines 2-3, and 64-68), using the module in reverse direction is also disclosed (column 8, lines 49-57). It would have been obvious to one skilled in the art at the time the invention was made to use the

Art Unit: 1723

polyamide membrane disclosed in '646, in the process of '446, because polyamide membranes are suggested for the salt concentration process of '446. Flushing the membrane in a cleaning process, e.g. fast flow or back flow is conventional in the art as discussed in '066, for dead end and cross flow membrane filters (column 5, lines 24-27, column 7, lines 9-36, column 11, last paragraph, column 14, lines 27-38, and 47-53), which cleaning techniques are used in other membrane pore sizes and configurations. Since the membrane of '646 is adapted for filtration in reverse mode, it would have been obvious to one skilled in the art at the time the invention was made to use reverse operation for cleaning the membrane by backwash or back flush, as suggested in '066. As to claim 3, the reverse osmosis is disclosed in '446 and '646; the later also discloses the spiral wound configuration in dead mode as claimed in claim 4. Regarding claim 8, the treatment of a regenerate from water purification is disclosed in '446, and discussed above.

As to claims 5-7, the composition of the aqueous salt solution, and the feed pressure is to disclosed in the references above, however, can be expected from the composition of the feed water in the process of '446, which feed water is ground water, which highly concentrated in salt and TOC, which is further remove from the resin in a regeneration process, further adjusting the pressure to achieve a predetermined flux and to overcome osmotic pressure, it would have been obvious to one skilled in the art at the time the invention was made.

3. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coillet (4,161,446) in view of Knamaru et al (3,933,646), and Slegers (4,980,066) as

Art Unit: 1723

applied to claims 1-8 above, and further in view of Hsu (5,853,599) or Mickols (6,290,853) of record. The references discussed above are not specific about the removal of pesticides, or organic matter or humic acid. Hsu'599) discloses the capability of reverse osmosis membranes for removing pesticides and organic matter, between other components or impurities in water (column 2, lines 37-50). Reference '853 discloses the use of pesticides and humic acid by nanofiltration and reverse osmosis membrane (column 1, lines 30-55, and column 2, second paragraph). It would have been expected to one skilled in the art the removal of these components by the reverse osmosis process of '446, due to inherent membrane properties, and water source composition (e.g. ground water).


4. Additional cited references are considered pertinent to Applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ana M Fortuna  
Primary Examiner  
Art Unit 1723

AMF  
February 20, 2004